



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

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Mr. James Newman
Lilliputian Systems Inc.
36 Jonspin Road
Wilmington, MA 01887

February 14, 2013

RE: WILMINGTON
Transmittal No.: X253732
Application No.: *NE-12-021*
Class: *SM-50*
FMF No.: *418628*
**AIR QUALITY PLAN
APPROVAL**

Dear Mr. Newman:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of coating operations and silicon chip processing operations at Lilliputian Systems Inc. located at 36 Jonspin Road in Wilmington, Massachusetts ("Facility"). The Application bears the seal and signature of Mr. Eric A. Pearson, Massachusetts Registered Professional Engineer number 39741.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control," regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner /operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Lilliputian Systems, Inc. is a research company that has developed a long-term power product for consumer electronics devices such as cell phones and laptops. To date, primarily Research and Development operations have been conducted at its 36 Jonspin Road, Wilmington, Massachusetts facility. This application concerns the construction and operation of a Dispensing Tools production line. The Dispensing Tools production line consists of a chemical process applied to silicon wafers followed by a series of drying ovens and curing ovens. During the Dispensing Tools process, volatile organic compounds (VOC) and hazardous air pollutants (HAPs) are expected to be emitted. This application also concerns both the ramp-up of two existing Research and Development Solvent Strip Tanks to high volume production as well as the construction and operation of two additional Solvent Strip Tanks for high volume production. VOC are expected to be emitted from the Solvent Strip Tanks' operation.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
Emission Unit Number (EU#)	Description	Design Capacity	Pollution Control Device (PCD)
DT1-DT8, DO1-DO11, CO1-CO11	8 Dispensing Tools (DT) 11 Natural gas fired Drying Ovens (DO) 11 Natural gas fired Curing Ovens (CO)	310,000 British thermal units per hour per oven	None
SS1-SS4	4 Solvent Strip (SS) Tanks	8 gallons each	

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION AND EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2, below:

Table 2				
EU#	Operational / Production Limit	Air Contaminant	Emission Limit	
DT1-DT8, DO1-DO11, CO1-CO11	1. Lilliputian Systems Inc. shall restrict its maximum VOC and maximum HAP usage such that none of the federally enforceable emissions caps in this Table shall be exceeded.	VOC	10.0 TPY	
			1.0 TPW	
		Total HAPs	1.5 TPY	
			0.2 TPW	
SS1-SS4		2. SS1-SS4 shall be equipped with covers that remain closed when unit(s) are not in use.	VOC	6.0 TPY
				1.0 TPW
Facility-wide	VOC		16.0 TPY	
			2.0 TPW	
	Total HAPs		1.5 TPY	
			0.2 TPW	

Table 2 Key:

EU# = Emission Unit Number

VOC = Volatile Organic Compounds

Total HAPs = total Hazardous Air Pollutants

TPW = tons per week

TPY = tons per consecutive 12-month period

DT = Dispensing Tool

DO = Drying Oven

CO = Curing Oven

SS = Solvent Strip tank

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3	
EU#	Monitoring and Testing Requirements
DT1-DT8, DO1-DO11, CO1-CO11	1. Monitor the amount of all VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste each week.
	2. Using a VOC and HAPs emission factor of 100% evaporation, monitor the emissions of VOC and total HAPs on a weekly basis, based on the amount(s) of VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste.
SS1-SS4	3. Monitor the amount of all VOC-containing products purchased, stored as inventory, used, and shipped offsite as waste each week.
	4. Using a VOC emission factor of 100% evaporation, monitor the emissions of VOC on a weekly basis, based on the amount(s) of VOC-containing products purchased, stored as inventory, used, and shipped offsite as waste. If the waste from SS1-SS4 contains solid contaminants from the stripping operations, then these solids need to be removed prior to weighing the waste for credit against emissions.
Facility- wide	5. Monitor the facility-wide amount of all VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste each week.
	6. Using a VOC and HAPs emission factor of 100% evaporation, monitor the facility-wide emissions of VOC and total HAPs on a weekly basis, based on the amount(s) of VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste.
	7. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	8. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.

Table 3 Key:

EU# = Emission Unit Number

VOC = Volatile Organic Compounds

HAP = Hazardous Air Pollutant

Total HAPs = total Hazardous Air Pollutants

% = percent

DT = Dispensing Tool

DO = Drying Oven

CO = Curing Oven

SS = Solvent Strip tank

Table 4	
EU#	Record Keeping Requirements
DT1-DT8, DO1-DO11, CO1-CO11	1. Maintain a record of the amount of all VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste, on both a weekly and consecutive twelve month time period basis.
	2. Using a VOC and HAPs emission factor of 100% evaporation, maintain a record of the emissions of VOC and total HAPs on both a weekly and consecutive twelve month time period basis, based on the amount(s) of VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste.
SS1-SS4	3. Maintain a record of the amount of all VOC-containing products purchased, stored as inventory, used, and shipped offsite as waste on both a weekly and consecutive twelve month time period basis.
	4. Using a VOC emission factor of 100% evaporation, maintain a record of the emissions of VOC on both a weekly and consecutive twelve month time period basis, based on the amount of VOC-containing products purchased, stored as inventory, used, and shipped offsite as waste.
Facility-wide	5. Maintain a record of the facility-wide amount of all VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste, on both a weekly and consecutive twelve month time period basis.
	6. Using a VOC and HAPs emission factor of 100% evaporation, maintain a record of the facility-wide emissions of VOC and total HAPs on both a weekly and consecutive twelve month time period basis, based on the amount(s) of VOC- and HAPs-containing products purchased, stored as inventory, used, and shipped offsite as waste.
	7. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15 th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report .

Table 4	
EU#	Record Keeping Requirements
Facility-wide	8. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	9. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EUs approved herein on-site.
	10. The Permittee shall maintain a record of routine maintenance activities performed on the approved EUs and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	11. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	12. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	13. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	14. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU = Emission Unit

EU# = Emission Unit Number

SOMP = Standard Operating and Maintenance Procedure

USEPA = United States Environmental Protection Agency

VOC = Volatile Organic Compounds

HAP = Hazardous Air Pollutant

Total HAPs = total Hazardous Air Pollutants

% = percent

DT = Dispensing Tool

DO = Drying Oven

CO = Curing Oven

SS = Solvent Strip tank

Table 5	
EU#	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a “Responsible Official” as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Northeast Regional Office (NERO) of MassDEP, Bureau of Waste Prevention (BWP) Permit Chief by email at nero.air@state.ma.us or fax at (978) 694-3499 as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to MassDEP NERO, Attention: BWP Permit Chief, within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. Pursuant to 7.12(1)(a)7., the Permittee is required to file Source Registration as a condition of this Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP’s request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 60 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	7. By March 15 th of each year, submit an Annual Emissions Report to this Office containing the actual VOC and HAPs emissions rates in tons, on both a monthly and consecutive twelve month time period. The MassDEP approved Report Form in Microsoft Excel format can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report .

Table 5 Key:
EU# = Emission Unit Number

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU#	Special Terms and Conditions
Facility-wide	1. The Permittee shall continue to evaluate and utilize low and no VOC and HAPs coatings and clean-up solutions which are technically and economically feasible in accordance with 310 CMR 50 (Toxic Use Reduction).
	2. Obtain prior written Approval from MassDEP in accordance with the applicable requirements of Regulation 310 CMR 7.02 for any proposed modifications of existing equipment or for the proposed installation of new equipment which will increase the facility-wide potential emissions of any air contaminant by one (1.0) ton or more per calendar year.
	3. The visible emissions from this Facility shall not exceed 10 percent opacity.

Table 6 Key:

EU# = Emission Unit Number

VOC = Volatile Organic Compounds

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (inches)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
DT1-DT8, DO1-DO11 CO1-CO11	37 (12 feet above roofline)	24	42	Ambient to 100
SS1-SS4	36 (11 feet above roofline)	24	48	Ambient to 100

Table 7 Key:

EU# = Emission Unit Number

°F = Degrees Fahrenheit

DT = Dispensing Tool

DO = Drying Oven

CO = Curing Oven

SS = Solvent Strip tank

6. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a

pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.

- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

7. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

8. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Susan McConnell by telephone at (978) 694-3292, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.

Susan McConnell
Environmental Engineer

James E. Belsky
Permit Chief
Bureau of Waste Prevention

copy: Wilmington Board of Health / Dept of Health
Wilmington Fire Department
MassDEP/Boston - Yi Tian
MassDEP/NERO – Susan McConnell, Marc Altobelli, Mary Persky, Martha Bolis

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